

Con. Response was used as a
filler due to MAP Scheduling at
STEFFEN.

SLIDE 2

Upon completion of error analysis complete
the Constructed Response (orange sheet).
Your explanations are very important.

Anna goes to pick apples. She sees 2 orchards next to each other; David's Orchard and Pam's Orchard. The signs below are at the entrance to the orchards.

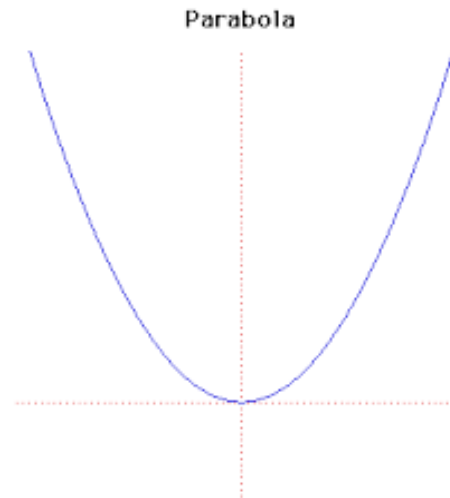
DAVID'S APPLE ORCHARD Pick your own apples! First 10 pounds \$2 per pound Each additional pound \$1 per pound	PAM'S ORCHARD DELICIOUS APPLES \$10 entry fee First 10 pounds \$1.50 per pound Each additional pound \$0.75
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Warm up

Read pages 524 all and 525 (Example 2 only).

Do page 528 #1, 2, 4, 5

Need graph paper.



Tests will be returned later in the week.

The degree of a **monomial** is the **sum** of the exponents of all its variables.

Example:

<u>monomial</u>	<u>degree</u>
$8y^4$	4
$3a$	1
$-2xy^2z^3$	1+2+3 or 6
7	0

The degree of a polynomial is the **greatest degree of any term**. To find the degree of a **polynomial**, you must **find the degree of each term**.

<u>Polynomial</u>	<u>Terms</u>	<u>Degree of each term</u>	<u>Degree of polynomial</u>
$-4x^2y^2 + 3x^2 + 5$	$-4x^2y^2, 3x^2, 5$	4, 2, 0	4
$3a + 7ab - 2a^2b$	$3a, 7ab, 2a^2b$	1, 2, 3	3

Find the degree of each: **Warm up**

1. $5x^3$

2. -13

3. $15 - 8ag$

4. $c^4 + 7c^2$

5. $3a^2b^3c^4 - 18a^5c$

6. $6n^3 - n^2p^2$

Tests will be returned later in the week.

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The degree of a **monomial** is the **sum** of the exponents of all its variables.

Warm up

The degree of a polynomial is the greatest degree of any term. To find the of a **polynomial**, you must **find the degree of each term**.

Example:

<u>monomial</u>	<u>degree</u>	<u>Polynomial</u>	<u>Terms</u>	<u>Degree of each term</u>	<u>Degree of polynomial</u>
<u>$8y^4$</u>	4	$-4x^2y^2 + 3x^2 + 5$	$-4x^2y^2, 3x^2, 5$	4, 2, 0	4
<u>$3a$</u>	1	$3a + 7ab - 2a^2b$	$3a, 7ab, 2a^2b$	1, 2, 3	3
<u>$-2xy^2z^3$</u>	<u>$1+2+3$ or 6</u>				
7	0				

Find the degree of each:

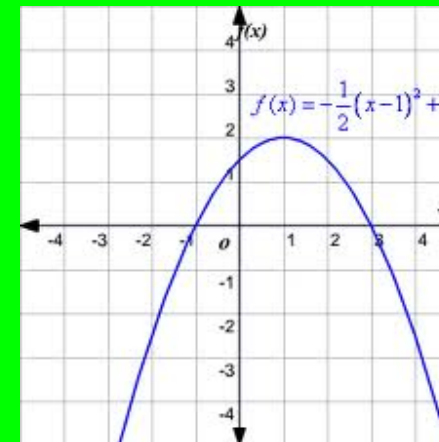
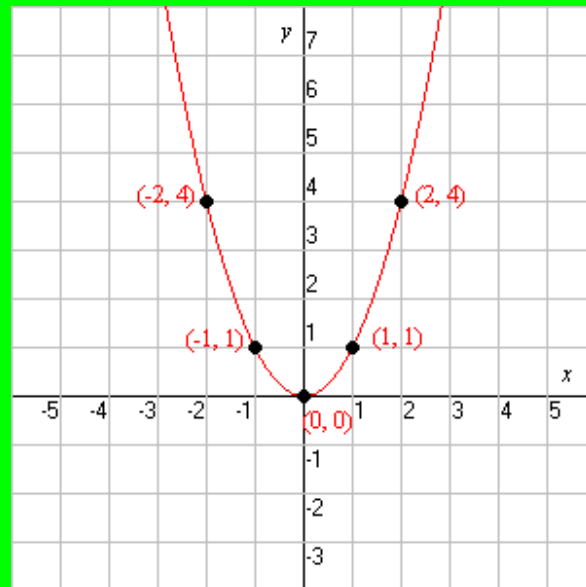
- | | | | |
|---------------|---|--------------------------|---|
| 1. $5x^3$ | 3 | 4. $c^4 + 7c^2$ | 4 |
| 2. -13 | 0 | 5. $3a^2b^3c^4 - 18a^5c$ | 9 |
| 3. $15 - 8ag$ | 2 | 6. $6n^3 - n^2p^2$ | 4 |

Lesson 10-1 Graphing Quadratic Functions

Day 1 p. 524

Today you will learn to...

Graph quadratic functions.



Why Learn about quadratic functions and equations?

Quadratic functions and equations are used to solve problems about fireworks, to simulate the flight of golf balls in computer games, to describe arches, to determine hang time in football, and to help with water management.

Exponential functions are used to describe changes in population, to solve compound interest problems, and to determine concentration of chemicals in a body of water after a spill. Exponential decay is one type of exponential function. Carbon dating uses exponential decay to determine the age of fossils and dinosaurs.

Quadratic function:

standard form:

$$y = \underline{ax^2 + bx + c}$$

$$3x^2 + 2x + 6$$

$$a =$$

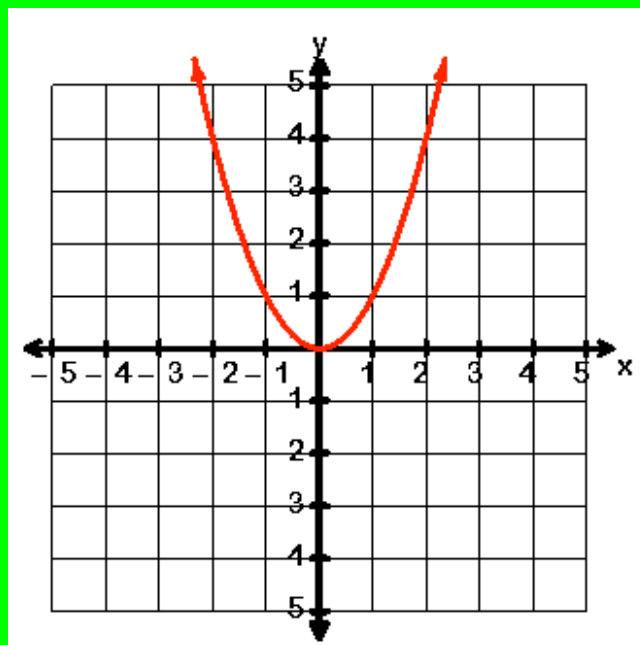
$$b =$$

$$c =$$

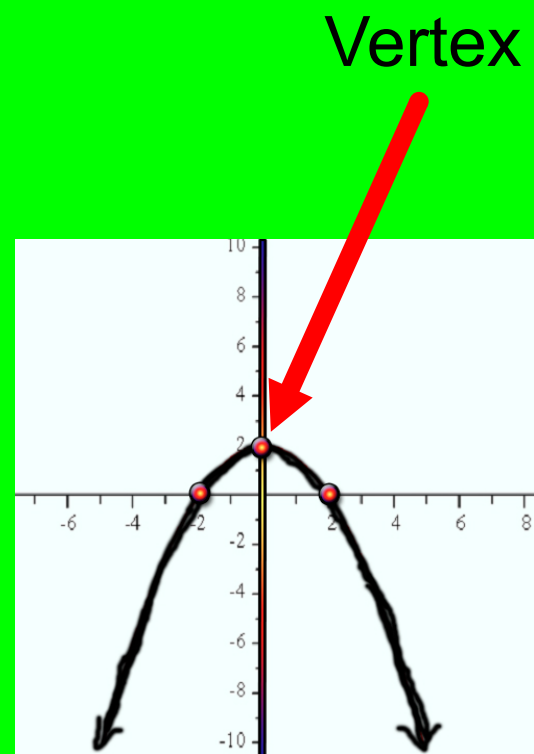
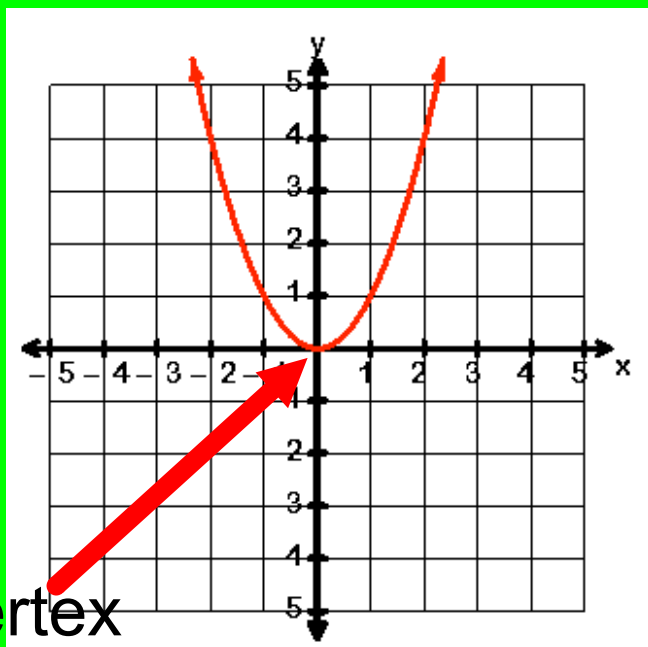
- a is not equal to 0
- degree of 2
- exponents are not equal to zero

Graphs of a quadratic function
are a parabola

$$y = ax^2 + bx + c$$



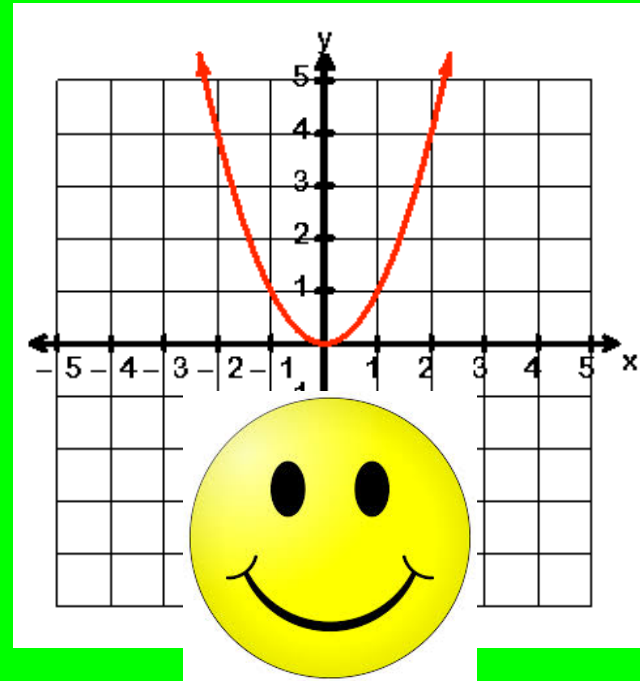
The maximum or minimum is the vertex of the graph.



Graphs that open upward:
the lowest point is the minimum

$$y = \underline{a}x^2 + bx + c$$

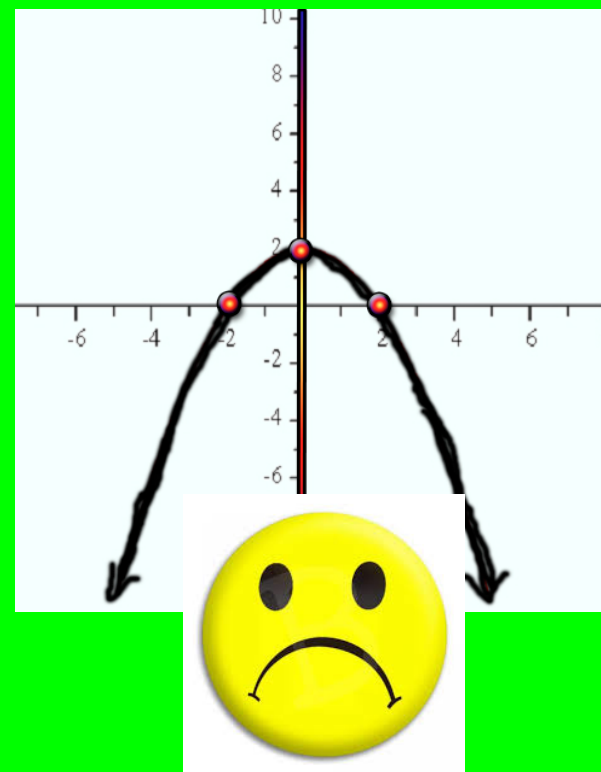
If the value of **a** (the leading coefficient) is **positive** the curve opens **upward** and the vertex is the **minimum**.



Graphs that open downward:
the highest point is the maximum

$$y = \underline{\underline{-a}}x^2 + bx + c$$

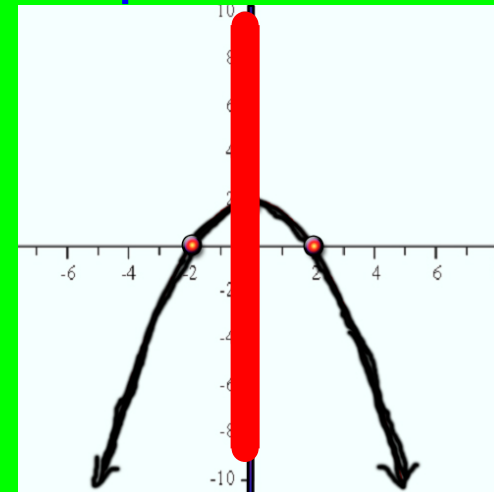
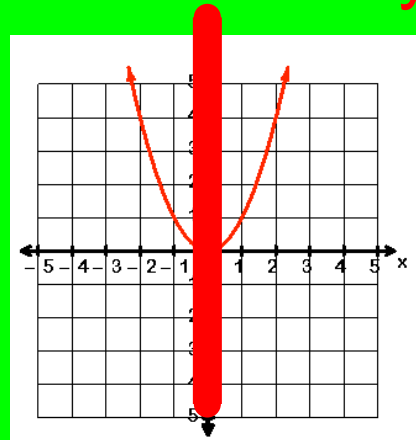
If the value of **a** (the leading coefficient) is **negative** the curve opens **downward** and the vertex is the **maximum**.



Axis of Symmetry:

Each point on the parabola on one side of the the axis of symmetry has a corresponding point on the other side of the axis.

The **vertex** is the only point on the parabola that is on the axis of symmetry.



http://www.khanacademy.org/math/algebra/algebra-functions/graphing_functions/v/graphing-a-quadratic-function



<https://www.youtube.com/watch?v=2eELYSY1zeU>
(Numbers to pick for the T chart)

Teacher note: This may be better saved for a later day after Axis of symmetry is introduced.

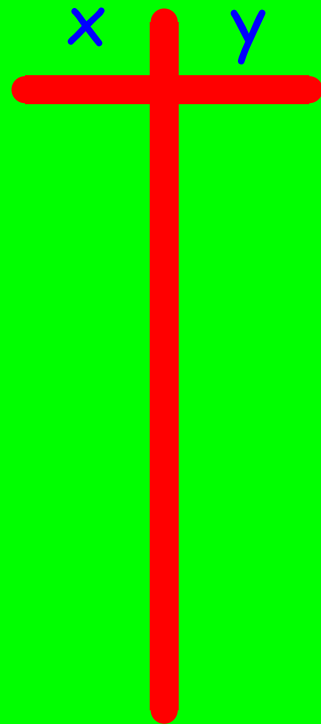
https://www.youtube.com/watch?v=_JFDFyw3llc

Parabola introduction

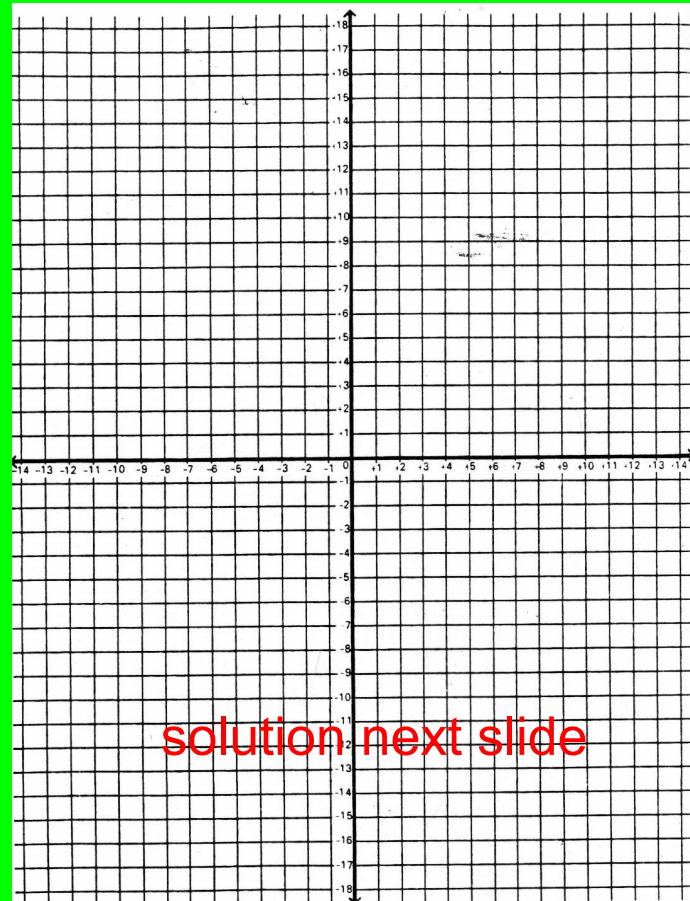
<https://www.youtube.com/watch?v=lbMir1UAO4I>

Parabola in real life

$$y = x^2 + 2x + 3$$



Use a table to graph:

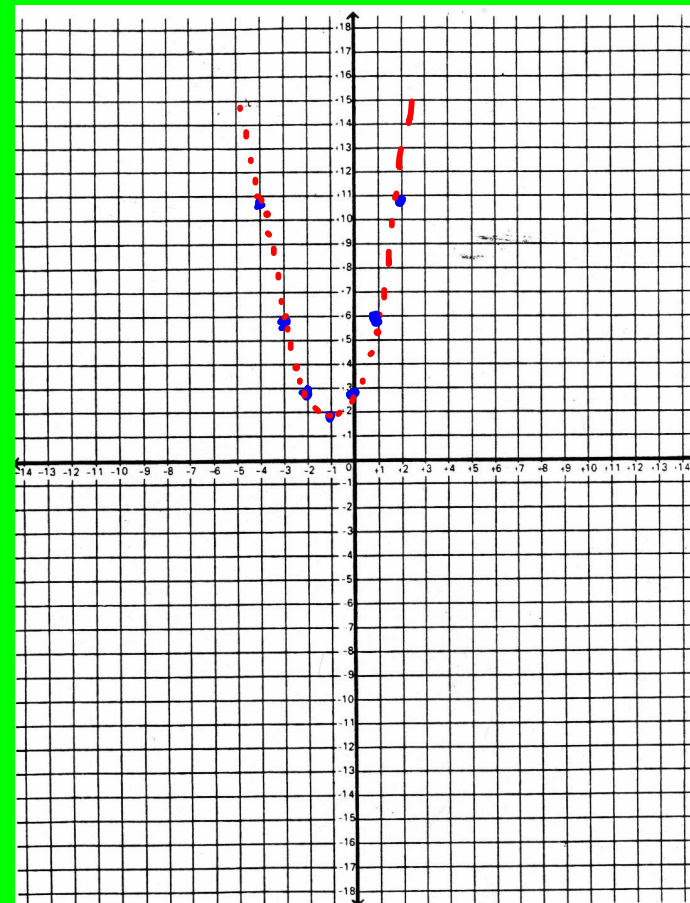


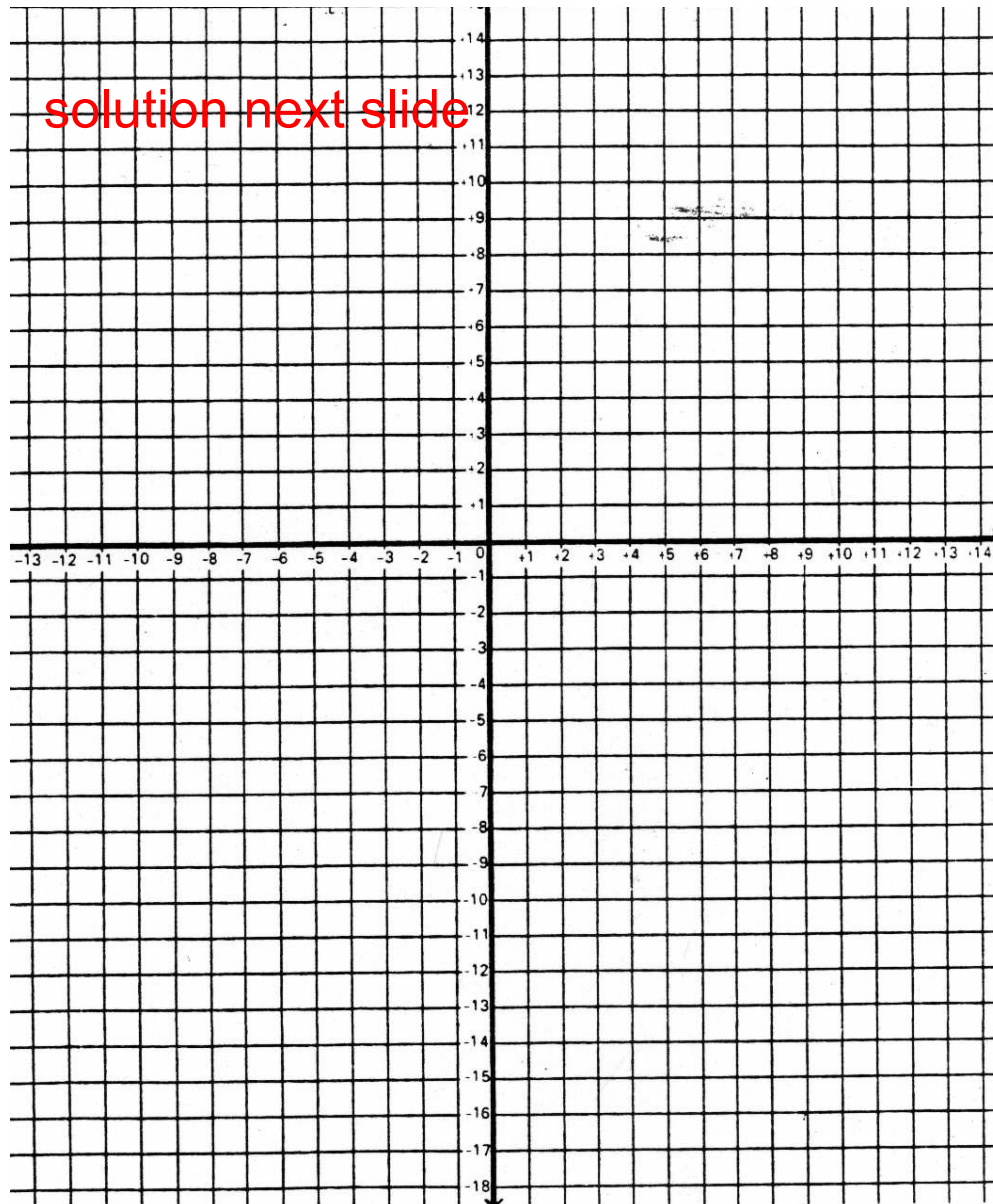
solution next slide

$$y = x^2 + 2x + 3$$

Use a table to graph:

x	y
-2	3
-1	2
0	3
1	6
2	11
-3	6
-4	11

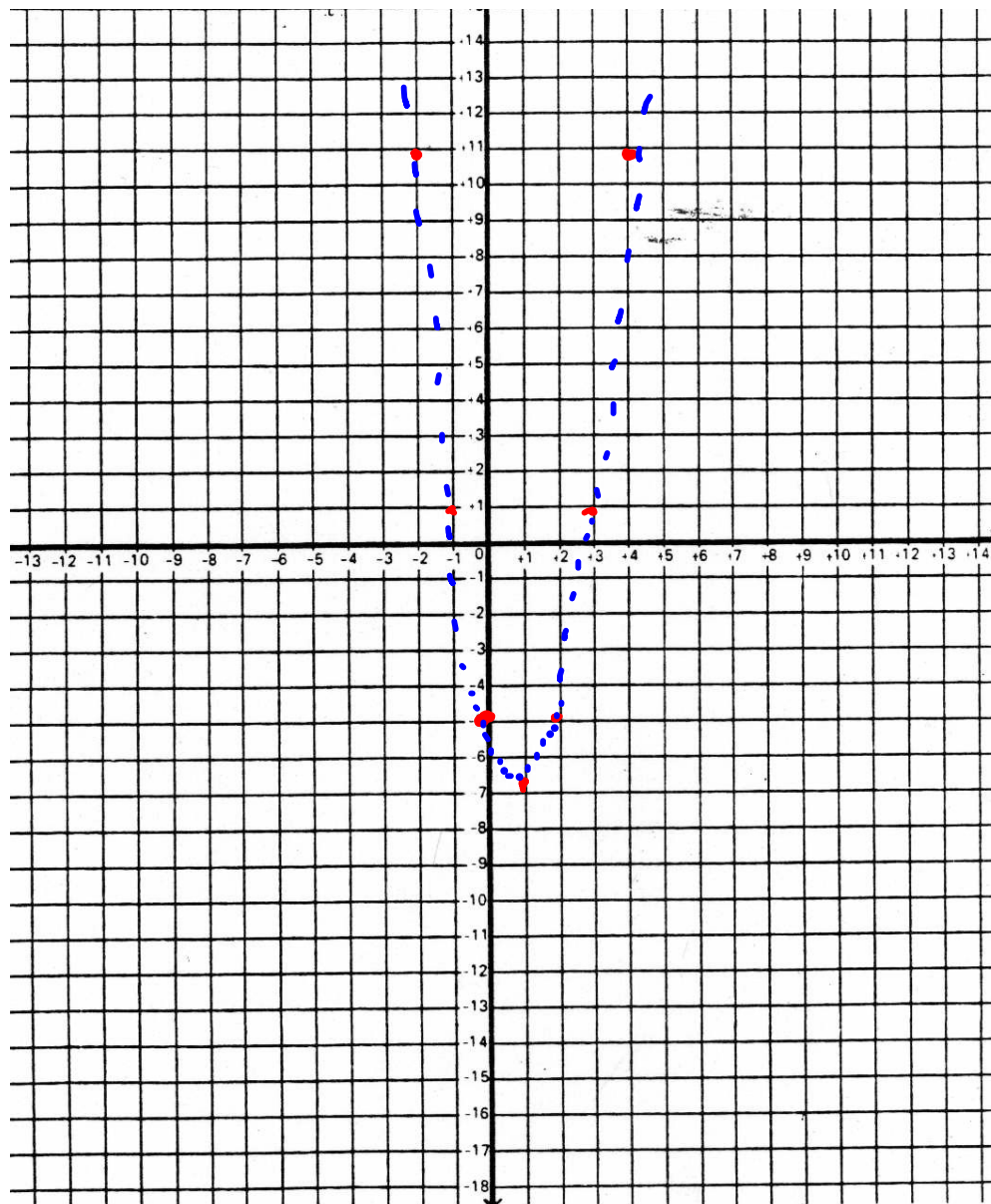




$$y = 2x^2 - 4x - 5$$

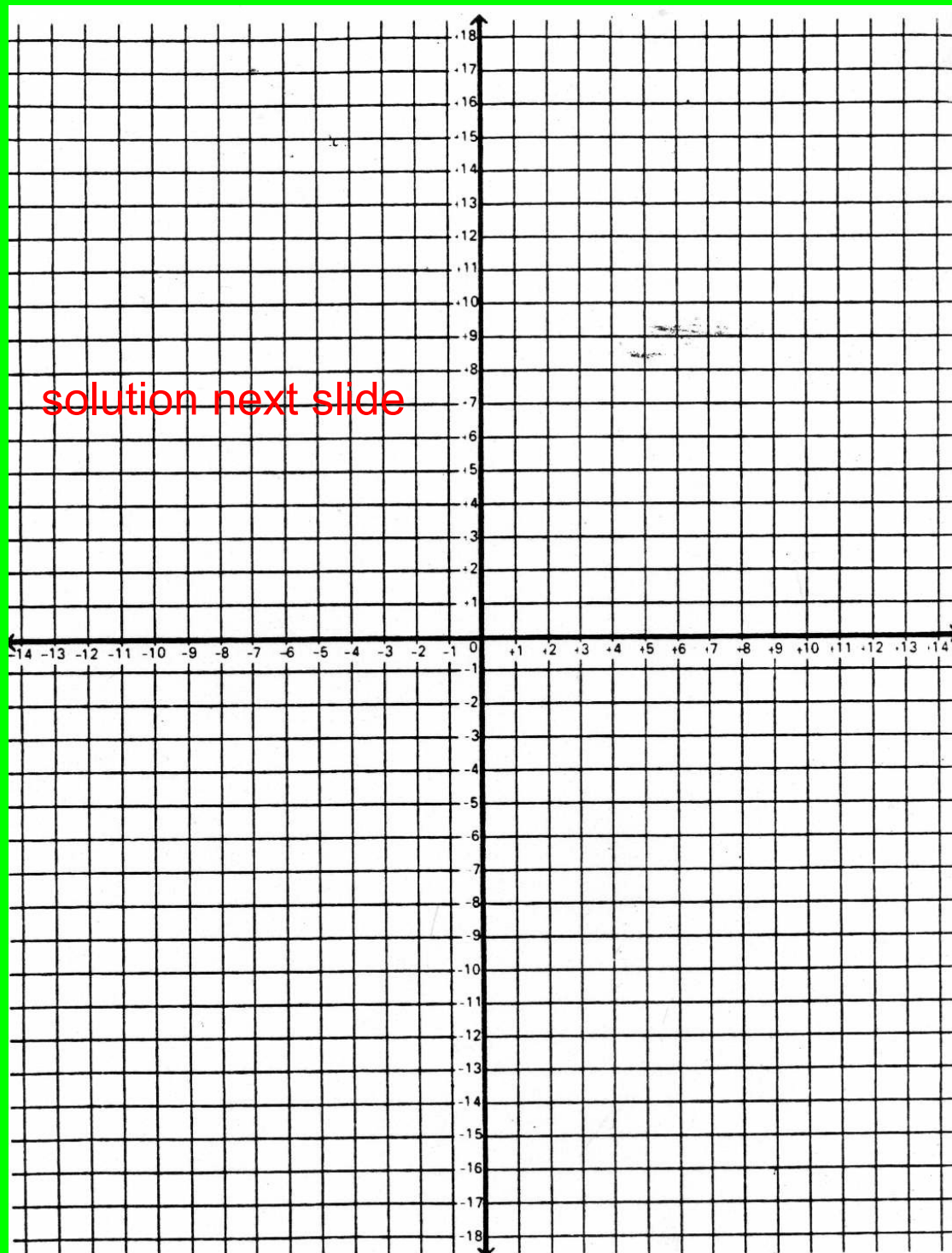
x y

A large red crosshair symbol, consisting of a vertical line and a horizontal line intersecting at the center. The vertical line is slightly longer than the horizontal line. The crosshair is positioned below the equation and above the x and y labels.



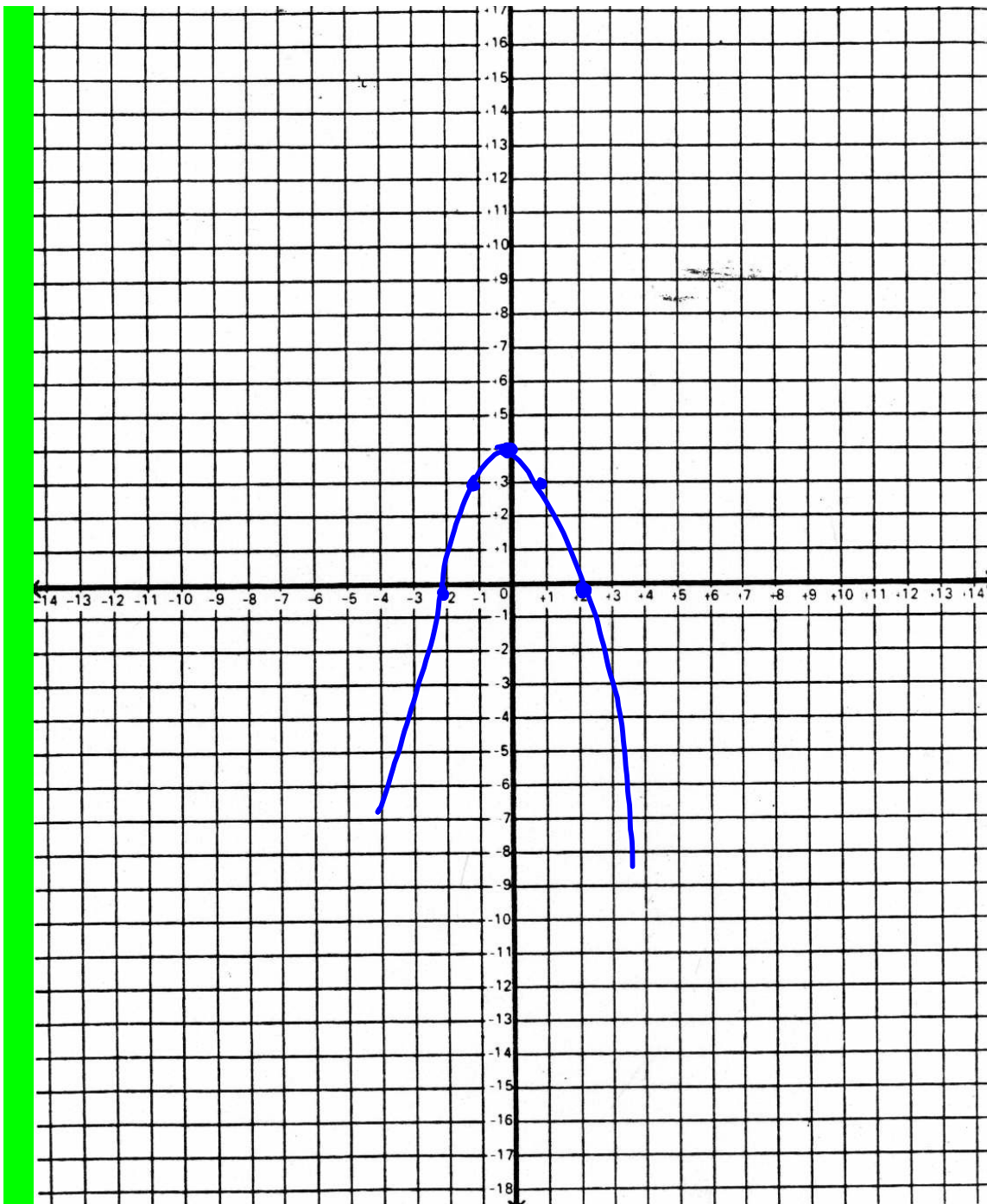
$$y = 2x^2 - 4x - 5$$

x	y
-2	11
-1	1
0	-5
1	-7
2	-5



$$y = -x^2 + 4$$
$$-(-2)^2 + 4$$

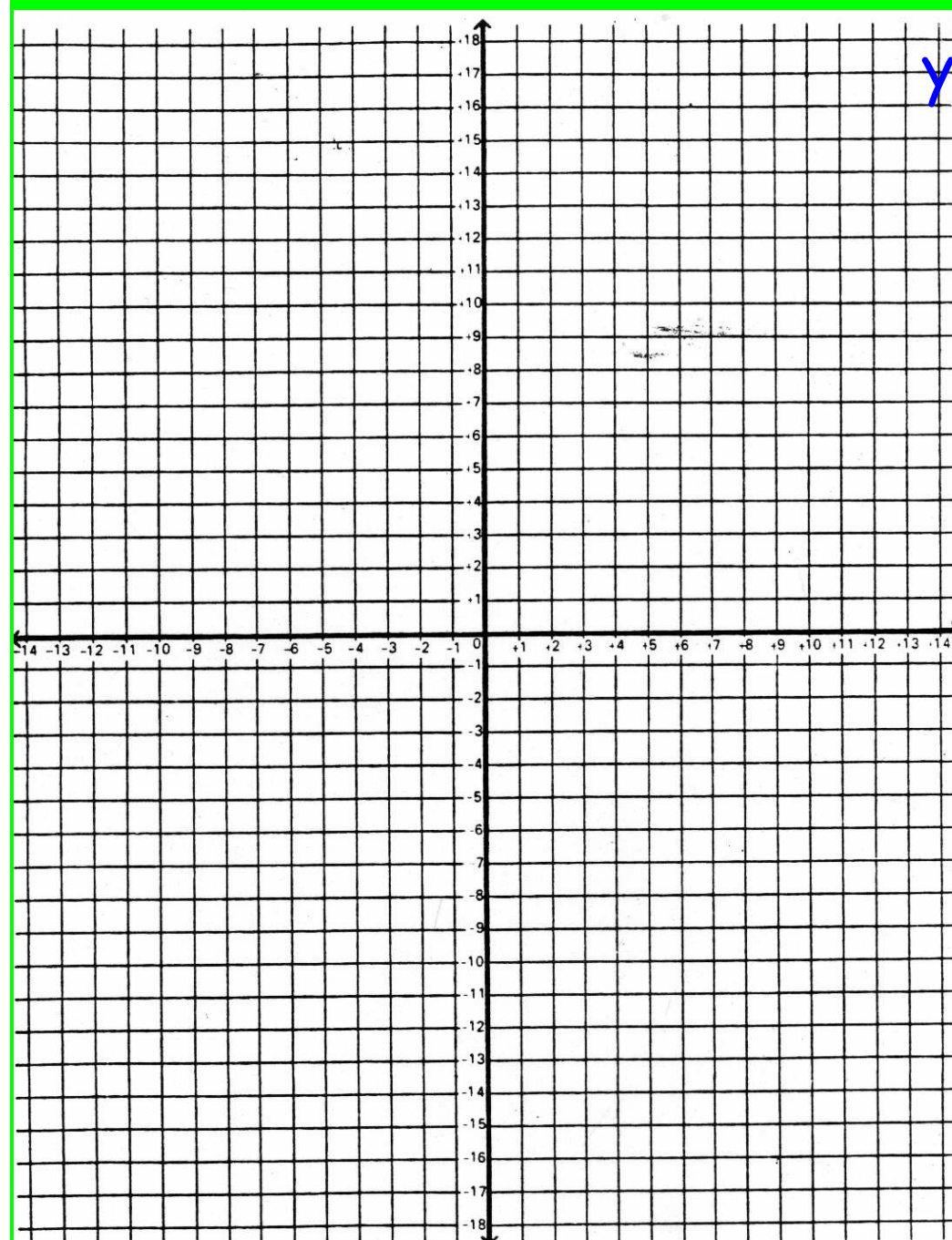
x	y
-2	0



$$y = -x^2 + 4$$
$$-(-1)^2 + 4$$

x	y
---	---

2	0
1	3
0	4
-1	3
-2	0



$$y = -2x^2 + 2x + 4$$

x	y
-2	-8
-1	0
0	4
1	4
2	0

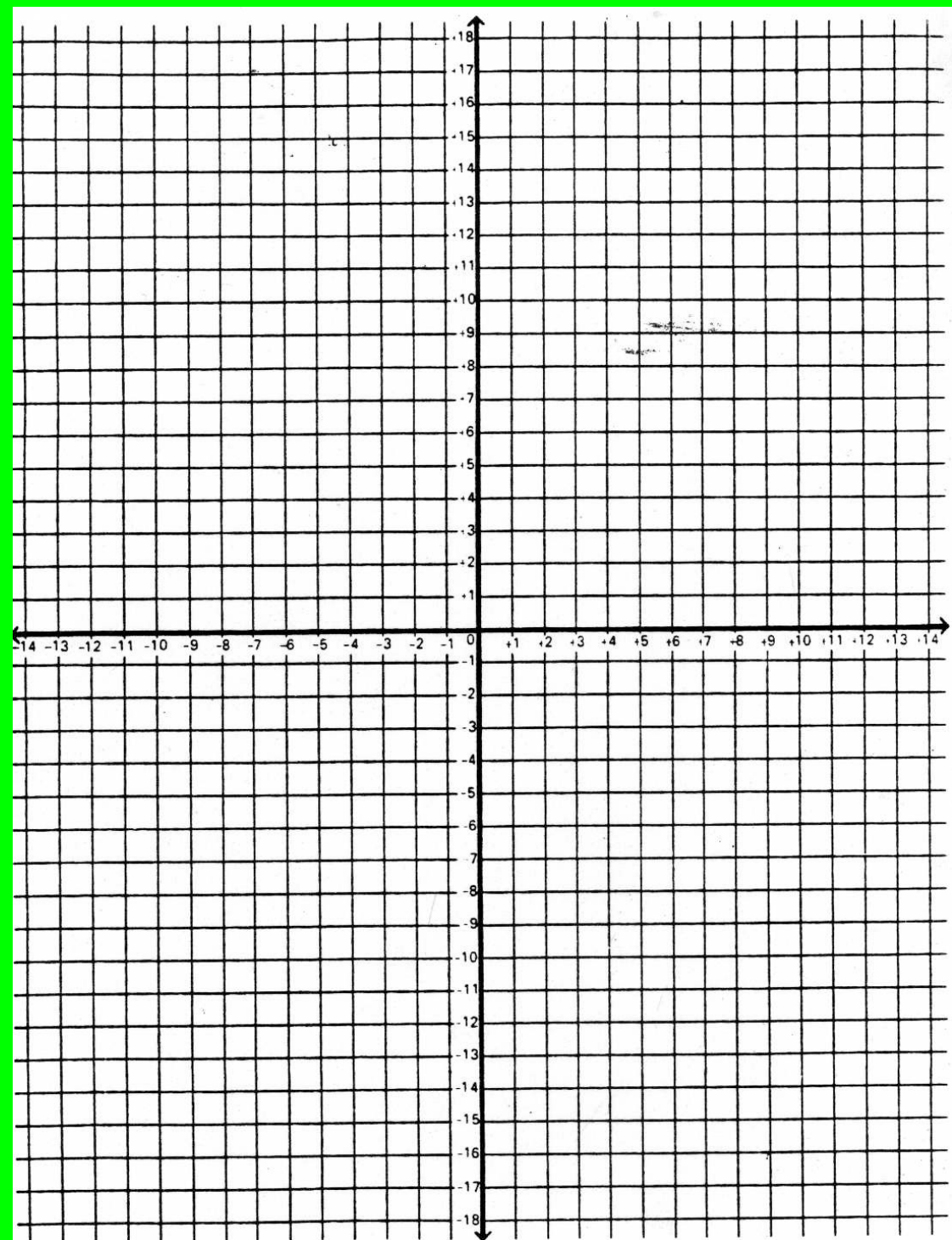
Homework:

Read pages 524 (all) and 525 Example 2

Skills Practice Sheet 10-1 #1-4 p. 581

Skills Practice Sheet 10-1 #1-3 p. 582





Part 2 - Day 3

10/10/2019

equation of the axis of symmetry:

$$x = -b/2a$$

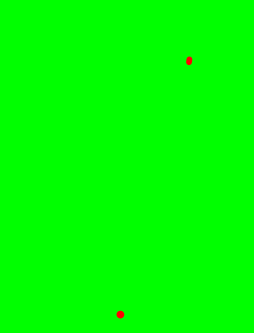
vertex: the x axis is found from the axis of symmetry

plug that x in to the equation to find y

.

identify the vertex as a
maximum and a minimum

if a is negative: maximum
if a is positive: minimum



Plug in an x on one side of the axis,
find the y

then find the coordinating point on
the other side

1, 3, 5 rule

if $a = 1$ the points move 1, 3, 5, 7....

if $a = 2$ the points move 2(1), 2(3), 2(5)...

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